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Instruction on Pronunciation Learning Strategies:

Research Findings and Current Pedagogical Approaches

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Instruction on Pronunciation Learning Strategies:

Research Findings and Current Pedagogical Approaches

by

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Abstract

Instruction on Pronunciation Learning Strategies: Research Findings and Current Pedagogical Approaches

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Since the late 1980s, pronunciation has played a prominent role in the foreign/ second language classroom. Recently, under the influence of the growing attention to language learning strategies and instruction, pronunciation instructors have devoted more attention to teaching learners the strategies that can contribute to their improvement in pronunciation. The purpose of this Report is to examine the literature on language learning strategies and strategy training, with a specific focus on pronunciation. This Report concludes with a pedagogical lesson grounded on the literature reviewed. The main goal of the lesson is to facilitate students' pronunciation learning through strategy training and practice.

Table of Contents

List of Tables

Chapter 1

Introduction

During the first semester of my Master's program, I became interested in pronunciation instruction; more specifically, I became interested in understanding how to enable international students to continue improving their English pronunciation on their own after they have received instruction. At the time, I was assigned to tutor an international PhD student who had failed to pass the ITA test[1], but was determined to make another attempt. We met for tutoring one hour a week for eight weeks. Based on the results of his pre-tutoring assessment, my tutee needed to work on many pronunciation features in order to improve his pronunciation accuracy. The amount of in-class practice for each of the pronunciation targets identified in the test was obviously limited. Therefore, it was truly important for my tutee to keep practicing autonomously outside of class. This experience motivated me to further my understanding of learning strategies and strategy instruction on pronunciation so that I would be better equipped to help students like him in the future.

Since language learning strategies have only recently been examined in relation to pronunciation improvement, there is not much research available for review. What is known to date reveals that most researchers have been devoted to identifying and categorizing pronunciation learning strategies, and looking into how and to what extent

[1] ITA test is an oral English proficiency assessment designed to measure prospective nonnative teaching assistants' ability to communicate in an instructional setting.

such strategies benefit learners (e.g., Derwing & Rossiter, 2002; Eckstein, 2007; Osburne, 2003; Pawlak, 2010; Peterson, 2000; Vitanova & Miller, 2002; Wrembel, 2008). Few researchers have touched upon pedagogical perspectives, such as assessing the effectiveness of strategy teaching interventions and/or proposing instructional models (e.g., Dickerson, 1987, 1994, 2000; Ingels, 2011; Sardegna, 2009, 2011; Varasarin, 2007). This Report seeks to explore the literature surrounding pronunciation learning strategies and strategy training in order to suggest a pedagogical lesson that facilitates students' self-instruction on pronunciation.

Chapter 2 of this Report traces the history of pronunciation teaching and learning, and discusses how the roles of teachers and learners have been redefined in the field of pronunciation instruction. Chapter 3 first reviews general language learning strategy research, including the definitions and taxonomies proposed by strategy experts. It then examines learning strategy research and taxonomies specific to pronunciation instruction. Chapter 4 focuses on strategy training on pronunciation. The chapter starts with an examination of the relationship between strategy use and learning outcome, and discusses the need and effectiveness of teaching interventions. The chapter concludes with a look at an instructional model for empowering students with pronunciation learning strategies. Chapter 5 proposes a lesson plan that aims to improve students' pronunciation learning through strategy training. Finally, Chapter 6 provides a conclusion and suggestions for further research.

Chapter 2

Pronunciation Teaching and Learning

This Chapter consists of two sections. The first section reviews the history of pronunciation teaching and learning. The second section discusses the changing roles for pronunciation teachers and learners.

A Historical Overview of Pronunciation Teaching and Learning

Prior to the 1960s, with the rise of Audiolingualism and the Direct Method, pronunciation was considered a priority in the language classroom. The primary goal of pronunciation instruction was the accurate production of segmental features, i.e., isolated sounds and phonological segments (Jones, 1997; Morley, 1991; Pennington & Richards, 1986). Teaching was carried out by addressing phonological rules explicitly, and by using modeling and correction. Learners practiced pronunciation through imitation, repetition, memorization, and drills (Celce-Murcia, Brinton, & Goodwin, 1996; Morley, 1991).

From the 1960s to the late 1970s, pronunciation was marginalized for several reasons. First, teachers' focus on habit formation received much criticism for its lack of meaning and context. That is, the repetition, memorization, and drills left no room for real and effective communication. Second, based on the Critical Period Hypothesis and the Cognitive Approach, it was thought that adult learners could not attain native-like pronunciation (Celce-Murcia et al., 1996; Jones, 1997). Third, influenced by Krashen's Input Hypothesis, speaking (output) was less required in the language classroom. In

addition, Krashen claimed that pronunciation, as an acquired skill, could not be taught overtly (Jones, 1997). These arguments ruled out the value of pronunciation teaching in language classrooms, which resulted in pronunciation instruction receiving increasingly less attention in language teaching and learning.

Later, in the 1980s, the advent of the Communicative Approach brought pronunciation back to the realm of language leaching. The goal was to enable learners to use the target language in a functional way; namely, to equip learners with communicative competency. The new pedagogy featured contextualized and authentic input, meaningful and communicative practice, task-based methodologies, and interactive approaches (Jones, 1997; Morley, 1991). According to Morley (1991), the new pedagogical views directed the foci of pronunciation instruction to the following aspects: basic philosophical considerations for teaching pronunciation; the importance of meaning and contextualized practice; learner involvement, self-monitoring, and cognitive involvement, and learners' feelings; intelligibility, variability, and correction issues; attention to stress, rhythm, intonation, reductions, assimilations, and sound-spelling connections; and expanded perspectives on the link between listening and pronunciation.

Since the late 1980s, the growing population of non-native speakers of English in both ESL and EFL settings, including refugees, immigrants, foreign professional employees, international faculty, scholars, and students in higher education also contributed to highlight the urgent need for pronunciation instruction. The goal of teaching these groups of learners is to enable them to become intelligible speakers rather

than to sound like native speakers, or "perfect pronouncers" (Morley, 1991, p. 489) of English. As for how to improve learners' intelligibility, researchers have argued on the teaching of prosody/suprasegmentals (e.g., rhythm, word stress, primary phrase stress, intonation, and so on) (e.g., Celce-Murcia et al., 1996; Chela-Flores, 2001; Derwing & Munro, 1997; Hahn, 2004; Pickering, 2001). Derwing and Munro (1997) suggested that compared to the correction of phonemic errors (i.e., the deletion, insertion, or substitution of a segment), improvement in prosodic proficiency was more likely to lead to non-native speakers' comprehensibility. Other scholars (e.g., Hahn, 2004; Pickering, 2001) provided evidence suggesting that it was indeed more beneficial for learners to improve their suprasegmental features over their segmental features.

For example, Pickering (2001) set out to examine the intonational feature of tone choice (i.e., rising, falling, and level tones) for comprehensibility. Twelve classroom presentations on the same subject given by six native-speaking teaching assistants (TAs) and six nonnative-speaking teaching assistants (ITAs) from mainland China were recorded for analysis. The data showed that the TAs managed to establish common ground of knowledge with their undergraduate students because they were more capable of selecting tone choices. In contrast, ITA's lack of tone varieties negatively affected their students' processing of information and led to communication failure. The researcher concluded that exploitation of the tone choice may affect comprehensibility.

Similarly, Hahn (2004) conducted a study in which she had three groups of university freshmen listen to three versions of a lecture given by a native speaker of

Korean. She then examined the groups' comprehension of the lecture. The three versions were only different in the placement of primary stress (also called primary phrase stress): one had primary stress correctly placed, another had it misplaced, and the other one did not have it at all. The findings showed that the listeners tended to recall more information about the lecture when they listened to the version with correct primary stress. That is, the correct placement of primary stress seemed to contribute to the non-native speaker's intelligibility.

The studies presented above provide proof of the importance of giving high priority to suprasegmentals in pronunciation teaching, and of the relationship between suprasegmentals and intelligibility. As Pennington and Richards (1986) put it:

> Accuracy at the segmental level is no longer the fundamental aim of teaching, since it is now known that accurate production of segmental features does not in itself characterize native-like pronunciation, nor is it the primary basis for intelligible speech. (p. 218).

For the past two decades, pronunciation instruction has also been influenced by a growing attention given to learner autonomy in language teaching. Learning to learn has been considered the goal for language teachers. Autonomous learners have been described as learners who 'take charge of [their] own learning' (Holec, 1981, p. 3, as cited in Cotterall, 2000, p. 109), such as those who understand the purpose of learning tasks, accept responsibility for their own learning, plan and execute learning activities, and monitor and evaluate their own learning process. It is assumed that autonomy can promote more efficient and effective learning (Dickinson, 1987). To this end, researchers

suggest that assisting learners to develop a repertoire of learning strategies is essential (Cotterall, 2000; Hsiao & Oxford, 2002; Oxford, 1990). Influenced by this emphasis on learner autonomy, pronunciation instructors have attempted to help learners become more active and more independent through strategy training, expecting that learners would be able to make more progress in the long run if they continued practicing on their own. In this changing context, it is not surprising that the roles of pronunciation teachers and learners have gradually changed over time.

The Changing Roles of Pronunciation Teachers and Learners

Due to the changing contexts and shifting foci in pronunciation teaching, traditional teacher and learner roles have been redefined in many language classrooms. According to Vitanova and Miller (2002), pronunciation instructors should not only teach how to produce sounds but how to learn pronunciation so that learners are able to identify their strengths and weaknesses, and use strategies to make themselves become more intelligible and communicative speakers.

In a communicative language classroom where learner-centered teaching approaches are applied, the pronunciation teacher is viewed as a "coach", who is responsible for aiding the learners to make improvement. According to Morley (1991), the tasks for the teacher-as-coach include:

1. Identifying and prioritizing the target features that will make the greatest impact on learners' intelligibility.

2. Helping learners set both short-term and long-term goals.
3. Monitoring and assessing speech production and performance.
4. Guiding modification by providing models, cues, or feedback.
5. Encouraging learners' speech awareness and self-monitoring.
6. Providing as many practice opportunities as possible.
7. Valuing and supporting learners' effort.

Sardegna and Molle (2008) also address new roles for pronunciation teachers. According to their viewpoint, the teacher is regarded as a facilitator and a trainer, whose ultimate goal is to make learners their own teachers. Hence, the responsibilities of the teacher are:

1. Facilitating learners' self-instruction with explicit pronunciation rules, recordings (as models), or charts.
2. Fostering learner autonomy and self-direction by encouraging learners to choose the strategies that fit their own needs, to take charge of their own learning process, and to examine the effectiveness of their strategy use.
3. Enhancing learners' self-involvement by giving them more challenging, interesting, or rewarding tasks, and encouraging them to be responsible for improving the targets they choose to work on.
4. Equipping learners with perception, prediction, and production strategies by overtly teaching them how, when, and why the strategies can be used.

Morley (1991), and Sardegna and Molle (2008) also discuss the changing roles of the learner in a learner-centered classroom. Taken together, a pronunciation learner is considered to be able to:

1. Identify self-responsibility for being an active participant rather than a passive recipient.

2. Manage his or her own learning process through goal-setting, decision-making and self-evaluation.

3. Develop speech awareness, self-observation skills, and self-monitoring skills with a positive attitude.

4. Build self-modification skills without regarding correction as a bad thing.

5. Develop a broad range of learning strategies that will lead to efficient and effective learning.

6. Perceive his or her own progress and recognize self-accomplishment.

This shift in roles and the new responsibilities assigned to both the pronunciation teacher and the learner not only reflect the notion of autonomous learning, but also suggest the importance of pronunciation learning strategies and strategy instruction. The next chapter first presents the theoretical background, definitions and categorizations of language learning strategies, followed by a review of documented pronunciation learning strategies and taxonomies that have been proposed in the pronunciation field.

Chapter 3

Learning Strategies

This Chapter starts with a review of research on language learning strategies in general and identifies definitions and classifications of language learning strategies provided by strategy experts. It concludes with a review of research on pronunciation learning strategies and pronunciation learning strategies taxonomies.

Language Learning Strategies

In the late 1970s and into the 1980s, the emergence of Communicative Language Teaching led to the prevalent focus on learner-centered teaching. Since learners were expected to take a more active role in learning, and the teacher was responsible for making them more independent of instruction, learning strategies became a potentially important issue that researchers were interested in.

Early research on language learning strategies mostly focused on how well language learners dealt with learning a second language. Rubin (1975) took the initiative to name the following characteristics that developed the profile of good language learners: (a) willing to make guesses, (b) not afraid of inhibitions, (c) strongly driven to communicate, (d) dedicated to practice, (e) willing to monitor their and others' speech, (f) attentive to meaning, and (g) attentive to form (i.e., grammar). Similarly, Stern (1975, as cited in Grenfell & Macaro, 2007, p. 11) listed the top-ten features that marked good language learners. In addition to the features that were included in Rubin's list (i.e., c-f),

good language learners tend to approach tasks actively, adapt personal learning styles to fit their needs, have tolerance of ambiguity, own the knowledge about how to tackle a language, are open to planning and experimentation, and develop the target language as a separate system from their first language. Rubin's and Stern's work were followed by Naiman, Fröhlich, Stern, and Todesco's (1978, as cited in Grenfell & Macaro, 2007, p. 12) identification of five major strategies used by good adult language learners, namely: (a) an active task approach, (b) recognition of language as a system, (c) realization of language as a means of communication and interaction, (d) management of emotional issues, and (e) L2 performance monitoring. While these scholars' research work advanced our understanding of language learning strategies by observing and identifying what good language learners do, they failed to take individual differences into consideration.

Later studies began to address individual differences in strategy use. They were more concerned about the relationship of strategies to learners' success in learning and to other variables, such as language proficiency, motivation, gender, age, etc. (Ehrman & Oxford, 1995; Green & Oxford, 1995; Griffiths, 2003; Oxford & Nyikos 1989). Among these variables, learners' proficiency level has been given a lot of attention. Green and Oxford (1995) employed the Strategy Inventory for Language Learning (SILL) to investigate strategy use by 374 university students at three different course levels. The findings indicated that language learning strategies were adopted more frequently by higher level students than lower level students. That is, advanced learners excelled

elementary learners in greater overall use of learning strategies. Other researchers (e.g., Eckstein, 2007; Griffiths, 2003; O'Malley & Chamot, 1990) have also found a significant positive correlation between learning strategy use and language proficiency.

A study conducted by Vann and Abraham (1989) focused on the learning strategies used by two unsuccessful language learners. They found that the two unsuccessful learners appeared to be active strategy users. However, they often failed to use the strategies appropriately to the nature of the task. The researchers suggested that it may be the orchestration of strategies rather than the number and frequency of strategy use that differentiates more successful and less successful learners. A similar conclusion indicating that the variety and frequency of strategies employed are not necessarily indicators of how successful a learner will be was drawn by Cohen (1998) in his review of the literature on the relationship between strategy use and learners' proficiency level.

In the past thirty years, different definitions of language learning strategies have emerged. Rubin (1975) first defined learning strategies as "the techniques or devices which a learner may use to acquire knowledge" (p. 43). In O'Malley and Chamot's (1990) definition, learning strategies are "the special thoughts or behaviors that individuals use to help them comprehend, learn, or retain new information" (p. 1). It reveals that learning strategies can be cognitive or behavioral. In addition, the definition makes it clear that strategies are goal-oriented. Oxford (1990) described learning strategies as "specific actions taken by the learner to make learning easier, faster, more enjoyable, more self-directed, more effective, and more transferable to new situations" (p. 8). Evidently, this

definition expands the scope of goals presented by O'Malley and Chamot (1990). It also presents that learning strategies enable learners to become more independent and further move toward autonomy. Later, Cohen (1998) linked the notion of consciousness to the definition of strategies by defining strategies as the "processes which are consciously selected by learners and which may result in action to enhance the learning or use of a second or foreign language" (p. 4). More recently, Hsiao and Oxford (2002) summarized that "strategies are the L2 learner's tool kit for active, conscious, purposeful, and attentive learning, and they pave the way toward greater proficiency, learner autonomy, and self-regulation" (p. 372). In sum, researchers generally agree that language learning strategies are conscious, intentional, or purposeful toward a goal of language learning and language use.

Based on the various descriptions and functions of language learning strategies, researchers have generated different taxonomies by using different criteria. Generally speaking, these categorizations reflect a certain degree of overlap and only few fundamental changes can be found. Oxford's (1990) taxonomy of language learning strategies is probably the most well-known and detailed typology. It consists of six strategy categories which directly or indirectly support language learning. Oxford argued that memory, cognitive, and compensation strategies are direct strategies that work with the language itself, while metacognitive, affective, and social strategies are indirect strategies that coordinate the learning process without involving language *per se*. The functions and examples of these strategies are summarized in Table 1.

Table 1

Oxford's (1990) Taxonomy of Language Learning Strategies

Direct strategies	**Function**	**Example**
Memory strategies	Helping learners store information in memory by making connections between it.	• Creating mental linkages. • Applying images and sounds. • Reviewing well. • Employing action.
Cognitive strategies	Helping learners process, structure, and use the language.	• Practicing. • Receiving and sending messages. • Analyzing and reasoning. • Creating structure for input and output.
Compensation strategies	Helping learners make up for knowledge gap.	• Guessing intelligently. • Overcoming limitations in speaking and writing.
Indirect strategies	**Function**	**Example**
Metacognitive strategies	Helping learners managing the learning process.	• Centering your learning. • Arranging and planning your learning. • Evaluating your learning.
Affective strategies	Helping learners deal with their emotions, motivations, and attitudes.	• Lowering your anxiety. • Encouraging yourself. • Taking your emotional temperature.
Social strategies	Helping learners interact with others.	• Asking questions. • Coopering with others. • Empathizing with others.

Compared to the previous classifications proposed by other researchers, Oxford's grouping system is much more comprehensive. As can been seen, Rubin's (1981, as cited in Hsiao & Oxford, 2002) categorization of direct and indirect strategies pays no attention to affective aspects. In O'Malley and Chamot's (1990) system of cognitive, metacognitive, and socioaffective strategies, communication strategies are not specifically addressed.

While the term language learning strategy is commonly adopted, Cohen (1998) introduced the term "language learner strategy" to the field. He asserted that language learner strategies encompass both language learning and language use strategies. That is, he grouped strategies according to their intended functions: those for the purpose of learning a language, and those for the purpose of using a language. According to Cohen (1998), whereas language learning strategies, composed of cognitive, metacognitive, affective and social strategies, have an explicit goal of improving learners' knowledge in a target language; language use strategies, including retrieval, rehearsal, cover, and communication strategies, focus mainly on assisting learners to utilize the language that has already been learned. In terms of cognitive, metacognitive, affective and social strategies, there is not much difference between what Cohen proposed and what has been mentioned in Oxford's taxonomy (see Table 1). Therefore, only language use strategies are being presented here.

According to Cohen (1998), retrieval strategies are for retrieving language material from storage by using memory searching strategies, such as keyword mnemonic.

Rehearsal strategies are for rehearsing target language structures, such as form-focused practice. Cover strategies allow learners to cover their lack of language competence, such as producing only the part of a phrase that they can deal with. Communication strategies, such as rephrasing a concept to make a conversation flow, help extend learners communicative competency and enable them to remain active in communication.

Although only two classification schemes are covered here, it should be noted that the distinctions between strategies are not so clear-cut (as suggested by Cohen, 1996; Dornyei, 2005; Hsiao & Oxford, 2002; Oxford, 1990). For example, memory strategies appear to serve cognition. That is, using available resources for learning can either be categorized as cognitive or metacognitive strategies. As O'Malley and Chamot (1990) point out, cognitive and metacognitive strategies are often strongly bound. Hence, it would be problematic to delineate whether a strategy is one or the other. In addition, learners sometimes use a mixture of strategies rather than a single strategy when performing a task. In this case, it would be difficult to fit the combination of strategies into any of the categories.

Although so many researchers have made tremendous efforts in describing, interpreting, and classifying language learning strategies, little associated research has been done in the area of pronunciation. The next section examines what is known to date concerning language learning strategies used specifically for pronunciation.

Pronunciation Learning Strategies

Language learning strategies have only recently been studied in light of

pronunciation learning. The first study that focused exclusively on pronunciation learning strategies was conducted by Peterson (2000). Diaries and interviews were employed to elicit data on the pronunciation learning strategies used by 11 adult learners of Spanish who were at three different levels (i.e., beginners, intermediate and advanced). The results revealed 21 pronunciation learning tactics [i.e., tools to achieve the success of strategies (Oxford, 1990, p. 7)] that had never been identified in the literature pertaining specifically to pronunciation learning, such as making up songs or rhythms to remember how to pronounce words, recalling teacher's pronunciation and mouth movements, practicing saying words slowly at first and then faster, forming and using hypotheses about pronunciation rules, deciding to focus one's learning on particular sounds, recording oneself to listen to one's pronunciation. Along with those already documented, Peterson collected a comprehensive taxonomy of pronunciation strategies, in which 12 pronunciation strategies were listed (see Table 2). The study revealed that cognitive strategies were favored by the students while memory, compensation, and affective strategies were used the least. In addition, despite the small number of participants in the study, it was found that advanced students adopted more and wider tactics than students at beginning and intermediate levels.

Derwing and Rossiter (2002) carried out a study investigating what pronunciation strategies adult ESL learners used to resolve the communication breakdown caused by pronunciation difficulties. Students ranged from low-intermediate to high-intermediate of their ESL proficiency. The data drawn from individual interviews showed that when

encountered with communication difficulties, more than half of the students preferred paraphrase as their favorite strategy, followed by self-repetition, idiosyncratic strategies (e.g., calming down, mime), writing/spelling, volume adjustment, and speaking clearly/slowly. The analysis also indicated an increasing use of paraphrase and a decreasing use of idiosyncratic strategies by students at higher levels. Another interesting finding indicated that only 10% of the pronunciation problems reported by students were related to prosody, which seemed to contradict the current focus on teaching prosody. Hence, the researchers concluded that teachers should better understand students' need and provide instruction accordingly so that students can benefit from it.

Osburne's (2003) study investigated the employment of pronunciation learning strategies by 50 advanced learners of English. The participants were first asked to record a language learning autobiography. Then, while the experimenter and the participants listened to the recording together, participants were asked to use better pronunciation to repeat certain sentences that were in their autobiographies. Finally, participants had to report what they did to improve their pronunciation. Their self-reports revealed they mostly used eight strategies: global articulatory gesture (e.g., voice quality settings), local articulatory gesture (e.g., tongue and lips position) or single sound, individual syllables, clusters below syllable level, prosodic structure (e.g., stress, intonation, rhythm), individual words, paralanguage (e.g., speed, volume, clarity), and memory or imitation. Among these, memory or imitation was the most preferred strategy, which was used by 34% of the participants. The most surprising result of this study is the little attention paid

to prosodic structure by the participants in terms of pronunciation improvement, which is similar to what Derwing and Rossiter (2002) found in their study.

The first classification scheme that solely dealt with pronunciation learning strategies was established by Peterson (2000). He managed to fit pronunciation learning strategies into the well-known and comprehensive taxonomy of language learning strategies proposed by Oxford (1990). Table 2 presents Peterson's (2000) taxonomy of pronunciation learning strategies based on Oxford's system:

Table 2

Peterson's (2000) Categorization of Pronunciation Learning Strategies Based on Oxford's (1990) Strategy Types

Oxford's Strategy Types	Pronunciation Learning Strategies
Memory strategy	• Representing sounds in memory.
Cognitive strategy	• Practicing naturalistically. • Formally practicing with sounds. • Analyzing the sound system.
Compensation strategy	• Using proximal articulations.
Metacognitive strategy	• Finding out about TL pronunciation. • Setting goals and objectives. • Planning for a language task. • Self evaluating.
Affective strategy	• Using humor to lower anxiety.
Social strategy	• Asking for help. • Cooperating with peers.

Eckstein (2007) suggested that Kolb's (1984, as cited in Eckstein, 2007, p. 30) Experiential Learning Theory is more appropriate to be adopted as the theoretical foundation for the pronunciation learning strategy categorization than the taxonomies of language learning strategies introduced in previous research because the stages within Kolb's (1984) construct better reflect the processes inherent in pronunciation acquisition, and can be further connected to pronunciation learning strategies, namely:

Table 3

Connection between Kolb's (1984) Construct, SLA, and Pronunciation Learning Strategies Proposed by Eckstein (2007)

Kolb's (1984) Experiential Learning Theory	**Pronunciation Acquisition Process**	**Pronunciation Learning Strategies**
Concrete Experience	Input	• Intent listening. • Representing sounds in memory. • Focusing on individual syllables.
	Practice	• Reading aloud. • Imitating or mimicry of native speakers. • Memorizing the pronunciation of words.
Reflective observation	Noticing	• Intent listening. • Focusing on suprasegmentals. • Distinguishing errors among other speakers.
	Feedback	• Self-monitoring. • Asking for help. • Cooperating with peers.

Table 3 (cont.)

Abstract conceptualization	Hypothesis forming	• Acquiring a general knowledge of phonetics. • Self-correcting. • Monitoring and eliminating negative interference.
Active experimentation	Hypothesis testing	• Using clear speech. • Rehearsing sounds. • Skipping difficult words.

According to Eckstein (2007), both input and practice provide learners with concrete experiences. For example, a learner hears the difference between /ɪ/ and /ɛ/, and attempts to produce the two sounds correctly. Then, the feedback received during practice enables the learner to notice pronunciation rules and patterns, and to reflect on his/her own utterance. Next, this reflection helps the learner conceptualize a hypothesis of how the sounds should be produced. Finally, the learner implements the changes based on his/her hypothesis. During the process, learners can employ any learning strategies to facilitate their pronunciation acquisition. Therefore, Eckstein (2007) concluded that Kolb's (1984) construct coordinates well with pronunciation learning strategies.

Pawlak (2010) argued that pronunciation learning strategies give learners an idea of how target language pronunciation works and enable them to perform better in spontaneous speech. He attempted to develop a valid and reliable tool which could be utilized to measure the use of pronunciation learning strategies. To this end, he constructed a classification of four groups of pronunciation learning strategies, in which

he adopted pre-existing typologies of language learning strategies as references (see Table 4). It should be noted that this taxonomy is not presented in its entirety as the author considered it tentative and open to be modified. There are four types of pronunciation learning strategies in this model:

Table 4

Pawlak's (2010) Categorization of Pronunciation Learning Strategies

Strategy Types	Pronunciation Learning Strategies
Metacognitive strategies	• Selecting particular features of pronunciation to focus on. • Looking for opportunities to practice. • Recording oneself to self-evaluate one's pronunciation.
Cognitive strategies	• Making use of phonetic symbols and articulatory descriptions. • Forming and testing hypotheses about pronunciation rules. • Comparing and contrasting the sounds between L1 and L2. • Memorizing. • Using color or sound associations. • Repeating after the teacher or a recording. • Reading aloud. • Using rhythmic gestures that accompany speech practice. • Looking up pronunciation in a dictionary. • Deliberately using words that are difficult to pronounce in spontaneous communication.
Affective strategies	• Relaxing when encountering pronunciation difficulties. • Rewarding oneself for making progress.
Social strategies	• Practicing pronunciation with others. • Asking others for error correction.

The documentation and classification of pronunciation learning strategies have laid the groundwork for extending our knowledge of learners' use of strategies. However,

in order to assist learners' pronunciation learning, there are other important issues that should be investigated, such as the relationship between learners' use of strategies and their success in pronunciation learning, the need and effectiveness of strategy instruction, and the instructional models for teaching pronunciation. Chapter 4 lays out the research on these issues.

Chapter 4

Strategy Training on Pronunciation

This chapter presents the relationship between strategy use and learning outcome. It then discusses the need and effectiveness of pronunciation strategy training. It concludes with a look at an instructional model for pronunciation: The Covert Rehearsal Model.

The Use of Pronunciation Learning Strategies and Learning Outcome

For the past three decades, there has been a large body of research demonstrating that the employment of learning strategies improves learning outcome. For example, Chamot and Kupper's (1989) study indicated that the effective use of strategies, especially self-monitoring and elaboration, enables learners to tackle different language tasks more successfully. Since then, many other studies have shown that advanced language learners employ a wider range of learning strategies than elementary learners (e.g., Green & Oxford, 1995). However, because the field of pronunciation learning strategy remains in its infancy, limited work has been completed to look at how learners implement strategies and whether such strategies facilitate pronunciation learning. The following studies were carried out to address these concerns.

Vitanova and Miller (2002) conducted an action-research study to examine the strategies and components of pronunciation instruction the learners found most valuable. The researchers assumed that learners would continue improving outside the classroom if

they were provided with pronunciation strategies. By using open-ended prompts to elicit ESL graduate students' reflections on learning pronunciation, the researchers found that students had positive comments on the empowerment of self-monitoring, self-correction, and autonomous learning strategies. That is, students recognized the value of metacognitive strategy training. Although the study did not validate the effectiveness of strategy instruction, and it had some limitations, such as no explanation of how the strategies were taught, it indicated the value of strategy instruction in a pronunciation classroom.

Eckstein (2007) conducted a study to investigate the relationship between pronunciation learning strategies used by 183 adult ESL learners and their spontaneous pronunciation performance. Strategic Pronunciation Learning questionnaires and a standardized speaking level achievement test were employed for data collection. Results revealed that immediate self-correction and asking for help were the most frequently used strategies for pronunciation improvement while using symbol systems and one's native sound system were the least preferred. Further analysis indicated that such strategies as noticing others' mistakes, asking for pronunciation help, and adjusting facial muscles had a positive correlation with pronunciation scores. That is, these three strategies were significant in predicting learners' pronunciation skills. Additionally, the study confirmed the claim that strong pronunciation learners used strategies more frequently than poorer learners. Furthermore, the researcher proposed a taxonomy of pronunciation learning strategies based on Kolb's learning construct (see Chapter 3), suggesting that learners

would follow the cycle, i.e., input/practice, feedback/noticing, hypothesis forming, and hypothesis testing, to develop pronunciation skills.

Wrembel (2008) carried out a survey investigating 32 undergraduate advanced English learners' thoughts on the effectiveness of self-directed strategies adopted in pronunciation classes and outside the classroom. The 16 strategies selected for the evaluation were taught to the participants during strategic pronunciation training. Data were gathered from the questionnaire composed of closed questions, yes/no questions, ranking, and open-ended responses. The results showed that dialogue reading and performing, and ear training were found to be the most useful and enjoyable strategies whereas kinaesthetic feedback and dialogue memorization were the least useful and enjoyable. When asked to name the strategies that were not listed on the questionnaire but were applied to pronunciation practice, most respondents declared that they relied heavily on extensive listening and a pronunciation dictionary. In addition to exploring the cognitive and metacognitive strategies employed by the students, the researcher was also interested in students' opinions on teacher's employment of socioaffective strategies. It was found that the students generally felt appreciative of the teacher's attempt to reduce anxiety. Overall, the findings revealed that the participants' opinions on the efficiency and usefulness of pronunciation learning strategies presented during the pronunciation course were quite positive. Hence, the researcher advocated the need to incorporate more autonomous learning strategies into pronunciation instruction.

The intent of the above review is not only to demonstrate how learners can benefit from the use of pronunciation strategies, but also to advocate the need for strategy instruction. According to Oxford (1990), "learners need to learn how to learn, and teachers need to learn how to facilitate the process…*conscious* skill in self-directed learning and in strategy use must be sharpened through training" (p. 201). The primary goal of strategy training is, through explicit instruction, to familiarize learners with the strategies they can consciously choose to facilitate their learning (Cohen, 1998). Ultimately, it is hoped that strategy training will empower learners to take control of their learning process and allow them to continue improving outside the classroom (Cohen, 1998; Oxford, 1990).

The Effectiveness of Pronunciation Learning Strategy Instruction

Seeing the value of pronunciation strategies has led researchers to investigate what strategies to teach and how to teach them in order to facilitate pronunciation learning. Meanwhile, the effectiveness of pronunciation strategy instruction has been a big concern as well. Although research into language learning strategies has provided substantial evidence for the effectiveness of strategy-based instruction on listening (e.g., Thompson & Rubin, 1996), speaking (e.g., O'Malley, Chamot, Stewner-Manzananes, Russo & Kupper, 1985), reading (e.g., Kern, 1989), and vocabulary learning (e.g., Brown & Perry, 1991; O'Malley, 1987), evidence supporting its efficacy for pronunciation

improvement is very limited. A review of studies providing this evidence for pronunciation improvement follows.

Varasarin (2007) conducted a study in which she demonstrated that teaching pronunciation learning strategies to 20 Thai learners of English (aged 8-10) led to increased intelligibility and confidence. The strategies that were taught involved cognitive strategies (not specified), metacognitive strategies (i.e., setting goals and objectives, planning and arranging for a language task, self directing and self evaluating on improvement), affective strategies (i.e., having a positive attitude toward the training and learning, fulfilling one's expectations, practicing and accepting responsibilities), and social strategies (i.e., cooperating with peers). To investigate the outcome of the training, data were collected from observations, group discussions, field notes, reflective reports and tape recordings. Study findings indicated that learning strategies successfully helped the learners develop communicative competence with confidence. Additionally, the researcher proposed a framework of teaching strategies which was made up of four steps: (a) identifying strategies for instruction; (b) introducing each strategy by naming it and explaining when and why to use it; (c) modeling the strategy by carrying out various activities; and (d) developing students' ability to evaluate strategy use and to apply the strategy to other tasks.

Sardegna (2009) sought to evaluate the long-term effectiveness of covert rehearsal strategy training by examining 39 university ESL learners' improvement in primary phrase stress, construction stress, and word stress. During the pronunciation course,

students were introduced to the strategies that could assist them to self-direct their learning, including prediction, production, and perception strategies. Data were collected four times from the beginning of instruction to 34 months after the end of instruction through read-aloud tests, questionnaires, and a self-report survey. Although the production of the target features in spontaneous speech was not measured, the findings showed that learners' use of strategies led to significant increases in accuracy for all the target features after the instruction was finished. In other words, the instruction on self-monitoring, self-correction, and self-practicing strategies succeeded in helping learners improve in reading primary phrase stress, construction stress, and word stress. Furthermore, it was found that persistence of practicing pronunciation with the covert rehearsal strategies that were taught during instruction enabled learners to maintain their improvement in the long run. With regard to proficiency, the low entering proficiency learners generally made more progress than the high proficiency learners, with half of them equaling the high entering proficiency students' scores in absolute accuracy when tested from five to twenty-five months after the course ended. Overall, this longitudinal study provided evidence of the long-term effectiveness of strategy training, especially for low entering proficiency learners.

A study conducted by Ingels (2011) aimed to investigate whether the combinations of targeted self-monitoring strategies (i.e., critical listening, transcription, annotation, and rehearsing) could be taught effectively to graduate-level ESL learners and to what extent the use of these strategies contributed to accuracy improvement in message

units, primary phrase stress, intonation, vowel reduction, linking, word stress, and multiword construction stress. The strategy training procedure was as follows. First, learners listened to and repeated after the instructor. Then, prediction skills were presented by the instructor. Next, learners transcribed, annotated their own speech, and finally, they audio recorded their rehearsals. The effectiveness of the three strategy combinations was examined: (a) listening and rehearsal; (b) listening, transcription and rehearsal, and (c) listening, transcription, annotating, and rehearsal. The results showed that the combination of listening, transcription, annotating and rehearsal was the most effective strategy type, especially for improving message units and primary phrase stress, whereas listening and rehearsal resulted in the least accuracy increase. Participants were found to be most successful in making improvement in accuracy for message units, linking and vowel reduction, and less successful for primary phrase stress and intonation. In addition, it was found that less proficient learners made more progress in accuracy than high proficiency levels. This finding supports Sardegna's (2009) results. Overall, the data sources demonstrated that each strategy combination led to increased accuracy in most cases. Therefore, Ingels concluded that training ESL learners on pronunciation self-monitoring strategy is effective, which is also in accordance with Sardegna's (2009, 2011) findings.

Another study also conducted by Sardegna (2011) aimed to assess the long-term effects of teaching pronunciation learning strategies to 38 international graduate students for improving linking sounds within and across words. Similar to her previous study,

Sardegna followed Dickerson's Covert Rehearsal Model to give instruction on pronunciation learning strategies. Read-aloud tests were employed to determine learner improvement in linking, and the factors related to their strategy use were teased out from questionnaires, a self-report survey and participants' comments on their practice. The findings, which closely matched what was found in Sardegna (2009) for improving in stress, demonstrated that learners made significant short-term (right after instruction) improvement in linking. Their long-term (5-38 months after instruction) improvement was also noticeable, which means the maintenance of learning after instruction was effective. Although the participants' ability to link sounds in spontaneous production was not measured, the study provided evidence in support of the effectiveness of empowering learners with pronunciation learning strategies to a certain extent.

Since the studies into effectiveness of instruction on pronunciation learning strategies are so limited and mostly center on the improvement of suprasegmentals, more empirical research is needed to support the claim that strategy training contributes to learners' continuous progress in pronunciation. For example, will strategy training also work for improving segmental features and to what extent is strategy use linked to increased accuracy? Or, how effectively can strategy instruction help learners improve in spontaneous production? As indicated in the above studies, not all learners made equal accuracy gains after strategy instruction. Therefore, it would be essential to look into how best to assist those who struggle to achieve larger gains in pronunciation.

The instructional interventions in recent studies (e.g., Ingels, 2011; Sardegna, 2009, 2011) on pronunciation strategy training followed the rationale and procedures of Dickerson's Covert Rehearsal Model. This model appears to be an effective tool for learners to achieve higher proficiency and long-term improvement in pronunciation. The following section discusses the purpose and process of Covert Rehearsal Model, and the learning strategies related to it.

Dickerson's Covert Rehearsal Model

"Give a man a fish and you feed him for a day. Teach a man to fish and you feed him for a lifetime." This well-known saying underscores the critical role of strategy training. Traditionally, learners make improvement in learning by following teachers' in-class instruction and direction. However, when outside the classroom or after courses are over, how can learners continue making progress without teachers' help? Who is going to plan, monitor, and evaluate their learning? These questions are directed to the notion that what learners need is to learn how to learn. Through training, learners can be empowered with the strategies that enable them to take control of their learning process and allow them to improve consistently outside the classroom (Cohen, 1998; Oxford, 1990). In the field of pronunciation, Dickerson's Covert Rehearsal Model was developed based on this concern. According to Dickerson (1989, as cited in Sardegna, 2009, p. 42), learners' progress in pronunciation takes time and does not necessarily happen in class. It gradually and mainly occurs as learners practice in private. Hence, the model is designed

to train learners how to teach themselves and how to manage their own pronunciation learning.

There are two reasons why Dickerson's model is presented here. On the one hand, since the field of strategy instruction is still immature and the available research is scanty, Dickerson's model is the only instructional model that deals with pronunciation strategy training. More specifically, unlike the work that focuses on identifying and categorizing pronunciation learning strategies, or the work that aims to advocate the need of strategy instruction but fails to offer any practical or systematic framework, the Covert Rehearsal Model attempts to give precise instruction on strategy development. On the other hand, the effectiveness of the model has been tested. Dickerson (1987) himself conducted a study in which the concept of cover rehearsal was embedded. The findings showed participants making gains both in fluency and accuracy. As noted earlier, both Sardegna (2009, 2011) and Ingels (2011) incorporated the Covert Rehearsal Model into the teaching interventions in their studies. Although the way the two researchers carried out the instruction on strategies were not completely the same (i.e., Sardegna exactly followed the model while Ingels added other elements to the model), results from both studies gave strong evidence in support of the benefits of this model.

Dickerson (2000) established a set of steps for covert rehearsal that leads learners to monitor and modify their pronunciation. These steps include:

1. Finding privacy to practice.
2. Practicing aloud.

3. Monitoring production for target features.
4. Comparing production with models.
5. Adjusting production to match the models.
6. Practicing the adjustment out loud until accurate and fluent.

Once learners are satisfied with their improvement, they can repeat these steps to work on other features. The procedure highly reflects other instructional models proposed for general language learning strategy training. For example, in Chamot and O'Malley's (1994, as cited in Cohen, 1998, p. 73) four-stage problem-solving process—i.e., planning, monitoring, problem-solving, and evaluation—, learners are asked to self-monitor their performance, which corresponds to step 3 in the Covert Rehearsal Model. In Dickerson's model, when learners compare their utterances with models and find the mismatch, they have to look for solutions to repair their utterances, which is the same as what they are encouraged to do when they encounter difficulties in Chamot and O'Malley's model. In addition, Dickerson's model suggests learners apply their most helpful strategies to improve other pronunciation targets, which is in accordance with Cohen (1998) and Oxford's (1990) proposition that learners should be taught to transfer useful strategies to new tasks and situations.

The following paragraphs intend to give more detailed information about each step of the Covert Rehearsal Model. Finding privacy for practice is the first thing to do because only when being alone can learners devote full attention to their own production.

A few states of privacy suggested are when commuting to school, waiting for an appointment, or lying in bed before falling asleep (Dickerson, 2000).

Practicing aloud is essential to covert rehearsal because it helps produce natural speech. To encourage more oral practice, instructors can have students record their production. In order to give the best performance, students tend to practice as much as they can before they record (Dickerson, 2000). This way, more fluent production can be generated.

However, covert rehearsal is not simply a "practice makes perfect" thing because practicing repetitively does not guarantee increased accuracy. It is the self-monitoring feature that guides learners to sound more targetlike. In covert rehearsal, students are expected to listen to their own production carefully and identify the significant difficulties or the problematic areas (Dickerson, 2000). But all too often, students' performance is monitored by teachers, which makes them get used to make correction based on teachers' feedback. Dickerson recommends providing a checklist to aid students during self-monitoring. Once students identify and become aware of the errors they make, they are ready to move on to the next stage: comparing their performance with models.

At this point, learners should be familiar with their pronunciation targets as well as be able to retrieve models from their memory and rules that they can apply to improve those targets. Models can be derived from various sources, such as what learners hear on the TV or radio, the conversations they overhear, or the rules or patterns taught in class. On the other hand, teachers have the responsibility to help learners identify models

because learners may only have limited access to them (Dickerson, 2000). The models stored in memory help learners form the perception of the target features. By comparing their own utterances with the models, learners will find out the differences, namely, the problematic places.

Without doing anything to the identified problematic production, there will be no improvement. Therefore, here comes another vital part of covert rehearsal, self-correction, i.e., repairing production to match the models. Since perceiving the discrepancies appears to be insufficient for modifying the output, learners should be equipped with predictive skills in order to make appropriate adjustments (Dickerson, 2000). Predictive skills can be developed through rule-based activities, as those shown in Dickerson (1999). In the same way teachers provide students with grammar rules, they can also provide them with sentence patterns, or spelling guidelines for pronouncing sounds or words (Dickerson, 1994). With prediction skills, learners can make changes accordingly to accommodate to the models.

In the final step of the model, before the time comes to make production in public, the repaired utterance should be repeated over and over again until fluent and accurate. That is, learners should practice the new utterance out loud to internalize it. With the Covert Rehearsal Model, pronunciation learning does not have to be confined to the classroom, and learners no longer have to rely on teachers to teach them. By engaging in this process, learners can become more self-directed, more independent, and more autonomous in learning pronunciation.

Dickerson's model would be much more complete if the corresponding strategies supporting each step were identified. Sardegna (2009) attempted to lay out the strategies that characterize the process of covert rehearsal. Based on Oxford's (1990) and Cohen's (1998) categorizations, Sardegna (2009) listed the strategies that are combined to make up the six conditions of covert rehearsal. She argued that due to its private nature, none of Oxford's direct compensation strategies and indirect social strategies, or Cohen's social strategies for language learning, and cover and communication strategies for language use are applicable to covert rehearsal. In addition, affective strategies are relatively less frequently employed in covert rehearsal because learners do not necessarily have to deal with their emotions, attitudes, or motivations when they are practicing by themselves. Overall, Oxford's direct cognitive strategies and indirect metacognitive strategies as well as Cohen's cognitive and metacognitive strategies for language learning, and his retrieval and rehearsal strategies for language use are involved in the whole process of covert rehearsal, except in step 1. In step 4, Oxford's direct memory strategies are emphasized since learners need to compare their production with models stored in their memory.

As Sardegna (2009) pointed out, one thing worth noting is that these strategies may happen in isolation, simultaneously, or in sequence in each step of the process. The so-called strategy clusters or strategy chains are likely to be adopted when learners encounter more complex tasks. Strategy specialists generally believe that no single strategy can function well in isolation. Using strategies in combinations is more effective for promoting learning (Cohen & Macaro, 2007). Chamot and Rubin (1994, as cited in

Cohen, 1998, p. 108) also argued that it is the effective management of a repertoire of strategies, rather than a particular strategy that results in improved performance. Similarly, Oxford (1990) stated that optimal learners develop combinations of strategies that work for them.

Understanding how the process of Covert Rehearsal helps learners improve their pronunciation seems fundamental for teachers interested in empowering learners for self-improvement. Yet, it is also of greatest importance that teachers understand how to implement the model in order to provide learners with the most effective instruction that will lead to their long-term pronunciation improvement. The next chapter introduces a lesson plan grounded on this model. The lesson integrates a variety of pronunciation learning strategies and activities.

Chapter 5

A Strategy-Based Pronunciation Lesson

This chapter proposes a pedagogical lesson that aims to teach students how to make improvement in pronunciation by following Dickerson's Covert Rehearsal Model. The 50-minute lesson plan is intended for adult ESL learners (see Table 5). The selected target features are *–ed* and *–s* endings. Instruction is composed of pronunciation teaching and strategy training. According to Dickerson (1987), students should be equipped with explicit pronunciation rules to be able to monitor and correct their own production. Dickerson provides orthographic rules for *–ed* and *–s* endings in Dickerson (1990). Although in this particular class, the instructor does not "teach" the rules but provides models for students to predict the rules, the instructor later reinforces the rules by providing more input. In addition, it is claimed that for strategy training to be effective, teachers should explicitly present and model the use of strategies (Chamot, Barnhardt, El-Dinary & Robbins, 1999, as cited in Rubin, Chamot, Harris & Anderson, 2007; Oxford & Crookall, 1989). Hence, 10 minutes of class time is allotted for the demonstration of the process of covert rehearsal. Classroom activities involve individual work, pair work, guided practice and communicative practice. The procedure generally follows Dickerson's (2000) Covert Rehearsal Model and the strategies addressed are based on Oxford (1990) and Cohen's (1998) taxonomies, and Sardegna's (2009) suggestions. Handouts are distributed for in-class practice and homework assignment (see Handouts in Appendix).

Table 5

Lesson Plan

Activity/Aids	Interaction	Procedure	Time
Greeting	N/A	✓ T* informs Ss** of the topic and content for this class – How does the Covert Rehearsal Model assist you to improve the pronunciation of *–ed* and *–s* endings?	3 min
Introducing the Covert Rehearsal model /Handout 1	N/A	✓ T presents the process of Covert Rehearsal and the suggested strategies that Ss can choose from.	10 min
Developing perception skills for *–ed* ending	T works with Ss.	✓ T reads aloud the following words: *wanted, decided, missed, reached, answered, reacted, invited, risked, combed, widened, snapped, failed* ✓ Ss listen and tell what they notice at the end of each word.	3 min
Developing prediction skills for *–ed* ending	T works with Ss.	✓ T asks Ss when to pronounce *–ed* as /d-t/, or /əd/. (T repeats the words if necessary.) ✓ Ss predict the rules. ✓ T reinforces the rules by providing more input.	3 min
Developing production skills for *–ed* ending/ Handout 2	Ss work individually and in pair. T works with Ss.	✓ Ss practice their prediction and production skills with Handout 1. ✓ T calls on Ss to check their production.	6 min
Demonstrating the model /Handout 3	T works with Ss.	✓ T models how to practice the pronunciation of *–ed* ending with Handout 3 based on the model.	10 min

Table 5 (cont.)

Developing perception skills for *–s* ending	T works with Ss.	✓ T reads aloud the following words: *cases, quizzes, fixes, wishes, faces, judges, fans, kisses, witches, trees, churches, weeks, houses, fingers* ✓ Ss listen and tell what they notice at the end of each word.	3 min
Developing prediction skills for *–s* ending	T works with Ss.	✓ T asks Ss when to pronounce *–s* as /s-z/, or /əz/. (T repeats the words if necessary.) ✓ Ss predict the rules. ✓ T reinforces the rules by providing more input.	3 min
Developing production skills for *–s* ending/ Handout 4	Ss work individually and in pair. T works with Ss.	✓ Ss practice their prediction and production skills with Handout 4. ✓ T calls on Ss to check their production.	6 min
Homework assignment/ Handout 1 & 5	N/A	✓ Ss review the model (Handout 1). ✓ Ss follow the model to practice *–ed* and *–s* endings with Handout 5. ✓ Ss record their production.	3 min

*T = Teacher; **Ss = Students

Chapter 6
Conclusion

The review of the literature in general reveals that although the pronunciation strategy field is still in its early stages of development, the importance of the role of teachers as facilitators, helping students become active, independent and autonomous pronunciation learners, has been highlighted by many pronunciation experts.

This Report has reviewed studies that suggest that students generally hold a positive attitude toward pronunciation strategy use and that more proficient students tend to incorporate more strategies into pronunciation learning. Research also supports that learners can be empowered by explicit strategy training, and can be taught to control their own learning. Employing the concise and useful Covert Rehearsal Model contributes to learners' self-improvement in pronunciation. The proposed lesson plan integrates strategic learning and pronunciation learning into the six-stage process where learners can engage in self-instruction and self-direction, and build up long-term improvement.

Since the field of pronunciation learning strategies is still in its infancy, there are lots of gaps to be filled in future research. For example, more empirical and longitudinal studies need to be conducted to validate the effectiveness of pronunciation strategy training (but see Sardegna, 2009, 2011, 2012). Additionally, a consistent classification scheme is required for helping learners approach specific strategies that best satisfy their needs. Another important direction involves the application of pronunciation learning strategies in the classroom, such as their teachability and learnability, and how a

pronunciation class can be organized around learning strategies. To conclude, any investigation into how effective pronunciation learning strategies are for improving learners' pronunciation would be a welcome addition to the field. This area of research needs more validation from empirical studies.

Appendix

Handout 1

(Based on Cohen, 1998; Dickerson, 2000; Oxford, 1990; Sardegna, 2009)

Covert rehearsal is a set of steps that is designed to assist you to teach yourself and to manage your own pronunciation learning. You can employ this six-step process to continue practicing pronunciation outside of class to attain long-term improvement.

The process of covert rehearsal and the related strategies:

1. **Finding privacy to practice**

   It means you being alone and completely focused without any distraction. It is not how long the privacy lasts but how concentrated you are during the period that counts. Privacy is available when you are engaged in daily routines, such as commuting to school or to work, waiting for someone, or lying in bed before falling asleep. This very first step involves the use of a metacognitive strategy, seeking practice opportunities.

2. **Practicing aloud**

   Talking out aloud helps you make more fluent output. To this end, try to make use of the following strategies:

   A. Cognitive strategies
      1) Repeating words, phrases and/or sentences
      2) Formally practicing sound systems
      3) Recognizing and using formulas, patterns, and rules
      4) Practicing naturalistically
      5) Identifying, grouping, retaining, storing, and manipulating target language structures

   B. Metacognitive strategies
      1) Overviewing and linking new knowledge with already known material
      2) Paying attention

3) Identifying the purpose of a language task
4) Setting goals and objectives
5) Arranging and planning for a language task

3. Monitoring production for target features

Carefully listen to your own production and identify the problematic places. Metacognitive strategies such as paying attention, self-monitoring and self-evaluating can make you more aware of how your speech sounds.

4. Comparing production with models

After you critically judge yourself, compare your performance with models stored in memory, which help you form the perception of targetlike utterances. Models can come from what you hear on the TV or radio, the conversations you overhear, or the rules and patterns we discussed in class. You may find the following strategies helpful:

A. Memory strategies
   1) Creating mental linkages by grouping, associating, or elaborating
   2) Applying images (e.g. tongue position, lips shape, face and throat muscles) and sounds by using imagery and keywords
   3) Representing sounds in memory
   4) Reviewing
   5) Employing action by using mechanical techniques

B. Cognitive strategies
   1) Retrieving sounds, words and phrases
   2) Recognizing formulas and patterns
   3) Reasoning deductively
   4) Analyzing contrastively
   5) Creating structures for input or output by taking notes, summarizing or highlighting.

C. Metacognitive strategies

1) Overviewing and linking with already known material
2) Paying attention

5. Adjusting production to match the models

Once you perceive the discrepancies between the models and your own production, the next step is to modify your production to match the models. To accommodate to the models, repair your problematic utterances by making use of prediction skills and the following strategies:

A. Cognitive strategies
   1) Using recognized formulas and patterns
   2) Transferring
   3) Imitation/mimicry

B. Metacognitive strategies
   1) Overviewing and linking with already known material
   2) Paying attention
   3) Self-monitoring
   4) Self-evaluation

6. Practicing the adjustment out loud until accurate and fluent

Finally, you should practice the repaired utterances aloud over and over again until they become internalized. The strategies that have been mentioned above can be recycled:

A. Cognitive strategies
   1) Repeating
   2) Formally practicing sound systems
   3) Recognizing and using formulas and patterns
   4) Practicing naturalistically

B. Metacognitive strategies
   1) Paying attention
   2) Self-monitoring

3) Self-evaluation

In addition to the strategies that have been mentioned, you can also employ affective strategies during covert rehearsal, such as:

A. Affective Strategies

1) Lowering anxiety through relaxation or deep breathing
2) Encouraging and rewarding yourself
3) Keeping a learning diary

Two more things should be noted:

1. Covert rehearsal is recursive. That is, once you are satisfied with your improvement in a certain target, you can repeat these steps to work on another target.
2. Some strategies are mutually supportive and can be used in combination. Try to expand your repertoire of strategies and you will find those that can best assist you to make improvement.

Handout 2

(Adapted from *Speechcraft*, p. 103)

Questions and answers: (Target: *–ed* ending)

1. **Use the rules to predict how the *–ed* endings should be pronounced. Then read the words aloud (individual work).**

attended _____	prepared _____	arrived _____	painted _____
invented _____	studied _____	watched _____	visited _____

2. **Read the phrases aloud (individual work).**

attended a concert	prepared a big meal	arrived home at 11pm
watched a movie	studied all the vocabulary lists	painted the wall
visited Europe	invented the electric light	

3. **Discussion (pair work).**

   Student A: Ask questions to your partner related to the phrases provided above. Some sample questions are given below. Provide follow-up questions after your partner has answered your question.

   Student B: Answer your partner's questions using the information provided in 2 above. Be prepared to answer some follow-up questions.

   Example:

   A: You came home late. Where did you go?

   B: I attended a concert.

   A: Really? Which concert was that?/Did you enjoy it?

   Sample questions:

   1) What did you do during the summer vacation?

   2) What did Mom do right after she got home?

   3) How did you spend your weekend?

   4) What's Thomas Edison's major contribution to the world?

   5) Did you arrive home before midnight last night?

   6) What did you do last night?

   7) What did you study for the quiz?

Handout 3

(Adapted from *Speechcraft*, p. 103)

Sandra's chore list: (Target: *–ed* ending)

Below is a list of chores Sandra completed last weekend. Read each sentence aloud, being careful with your pronunciation of *–ed* ending.

1. She started the cleaning from her bedroom.
2. She vacuumed the carpet.
3. She changed the bed sheet and pillowcase.
4. Then she scrubbed the bathtub and toilet.
5. She also wiped the bathroom mirror.
6. Next she dusted and swept the living room.
7. She polished the hardwood floor and wood furniture.
8. Later she washed the dishes and cleaned kitchen cabinets.
9. She also watered the plants in the backyard.
10. Finally, she collected and sorted the mails.

Handout 4

Max's schedule: (Target: –*s* ending)

1. **Use the rules to predict how the –*s* endings should be pronounced. Then read the words aloud (individual work).**

Max's ___	George's ___	Mitch's ___	questions ___
candidates ___	resources ___	managers ___	sales ___
goals ___	investors ___	projects ___	interns ___

2. **Read the phrases aloud (individual work).**

Max's office	George's café	Mitch's hall
interview questions	three candidates	human resources
department managers	sales goals	potential investors
new projects	incoming interns	

3. **Discussion (pair work).**

Max is a CEO of a pharmaceutical company. Below is his schedule for tomorrow.

Time	Location	Things to do
8-9 a.m.	Max's office	Prepare the interview questions and the speech
9-11:30 a.m.	Conference room	Interview three candidates for the position of human resources director.
12-1 p.m.	George's Café	Have lunch with department managers to discuss sales goals
1-2 p.m.	Max's office	Meet with potential investors to discuss new projects
2:30-4 p.m.	Mitch's Hall	Give a speech to incoming interns

Student A: Ask questions to your partner based on the schedule. Some sample questions are given below.

Student B: Answer your partner's questions using the information provided above.

Example:

A: What does Max plan to do from 8 to 9 a.m. tomorrow?

B: He plans to prepare the interview questions and the speech.

Sample questions:

1. Is Max going to meet with department managers tomorrow morning?
2. Where is the interview going to take place?
3. What is the position that the candidates are interviewed for?
4. What is Max going to do after lunch?
5. Where is Max going to give the speech?

Handout 5

Sharing recipes: (Target: *–ed* and *–s* endings)

You've made fried noodles and a pound cake for a potluck. Explain how you made them step by step (make changes if necessary). Be careful with your pronunciation of *–ed* and *–s* endings. (Tip: Focus on one target at a time. Once you are satisfied with your improvement, continue working on the other target.)

Example: First, I boiled 2 packages of 3-ounce noodles in a medium pot.

Recipe for fried noodles:

Procedure	Ingredient	Cooking utensil
1. boil	1. 2 (3 ounce) packages noodles	1. medium pot
2. rinse, drain, set aside	2. N/A	2. N/A
3. shred	3. 2 lb pork, 2 bunches scallions	3. N/A
4. wash	4. 1 lb bean sprouts	4. N/A
5. peel, grate	5. 3-4 cloves garlic, 2 carrots	5. N/A
6. beat	6. 2 eggs	6. small bowl
7. heat	7. 2 tablespoons oil	7. skillet
8. cook	8. garlic, scallions, pork	8. N/A
9. stir	9. bean sprouts, carrots, noodles	9. N/A
10. add	10. 2 tablespoons soy sauce, few pinches salt, 2 beaten eggs	10. N/A

Recipe for pound cake:

Procedure	Ingredient	Baking utensil
1. grease	1. N/A	1. pan
2. sift	2. 4 cups flour, 2 teaspoons baking powder, few pinches salt	2. medium bowl
3. beat	3. 2 sticks butter, 1 1/2 cups sugar	3. large bowl
4. add and blend	4. 2 eggs	4. N/A
5. mix	5. flour mixture, 1 1/2 cups milk	5. N/A
6. add	6. few drops vanilla extracts	6. N/A
7. pour	7. batter	7. prepared pan
8. bake (1hr 20 min)	8. batter	8. oven (350°F)
9. cool (1hr)	9. pound cake	9. N/A

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